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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,213	09/26/2001	Raleigh L. Cox	16308/94337-00	2015

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EXAMINER

HRUSKOCI, PETER A

ART UNIT PAPER NUMBER

1724

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/964,213

Applicant(s)

COX ET AL.

Examiner

Peter A. Hruskoci

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet, 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet, 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 20 "whereby...wastewater" appears to be misdescriptive because it appears that the step of ceasing the gas flow for a nitrate reduction period reduces the nitrate concentration in the wastewater. Claims 21-31 depend from claim 20.

Claims 1-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guy et al. in view of Scroggins and Tabata et al. Guy et al. disclose (see col. 2 line 61 through col. 4 line 20) a method for treating wastewater in an apparatus configured to have an aeration zone and quiescent zone substantially as claimed. The claims differ from Guy et al. by reciting that the method reduces nitrate concentration in the wastewater, and includes steps of ceasing gas flow to the aeration zone, intermittently mixing the wastewater in the aeration zone, monitoring the dissolved oxygen level in the aeration zone, and ceasing gas flow when a predetermined dissolve oxygen level has been reached, respectively. Scroggins (see col. 8 line 22-63) disclose that it is known in the art of water treatment to utilize a dissolved oxygen probe positioned in an aeration zone to provide dissolved oxygen measurements to a controller for regulating air flow to the aeration zone during an oxic cycle, and terminating air flow during an anoxic cycle. Tabata et al. disclose (see col. 3 line 66 through col. 6 line 48) disclose that it is known in the art to reduce nitrate concentration in wastewater by agitating the wastewater under anoxic conditions. It would have been obvious to one skilled in the art to modify the method of Guy et al. by including the recited steps for ceasing gas flow, mixing and monitoring in view of the teachings of Scroggins and Tabata et al. respectively, to aid in reducing nitrate concentration in the wastewater. The specific type of mixing, mixing periods and intervals, nitrate reduction period,

and oxygen levels utilized, would have been an obvious matter of process optimization to one skilled in the art, depending on the specific wastewater treated and results desired, absent a sufficient showing of unexpected results.

Claims 1, 11, 20, and 32 properly written to include method steps for using the apparatus recited in the claims of the parent application US Patent 6,332,978, would be allowable.

Applicants allege that if the air injection system of Tabata et al. were utilized for continuous mixing, no nitrate reductions would take place as an oxygen starved environment would fail to come about. It is submitted that the agitating and aeration steps performed in Tabata et al. are controlled to produce an anoxic condition and a succeeding anaerobic condition to produce denitrification, which appear to require the production of a oxygen starved environment. It is further submitted that intermittent mixing for agitation does not appear to be excluded from the teachings of Tabata et al.. It is noted that an oxygen starved environment is not recited in the instant claims. Furthermore, applicants have not supplied sufficient comparative evidence with Tabata to support the above allegation.

Applicant argues that none of the prior art teaches that aeration ceases when the DO levels fall below a predetermined value as recited in claim 20. It is submitted that the ceasing of aeration is not recited in claim 20. It is further submitted that the microprocessor disclosed in Scroggins is capable of controlling and ceasing aeration when predetermined DO levels are attained. Claim 20 properly written to overcome the above 35 USC 112 rejection and to include a step for ceasing gas flow and aeration in said aeration zone for a nitrated reduction period, to reduce the nitrate concentration in said wastewater, would be allowable.


Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter A. Hruskoci whose telephone number is 703-308-3839. The examiner can normally be reached on Monday through Friday from 6:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on 703-308-1261. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Peter A. Hruskoci
Primary Examiner
Art Unit 1724